

RESPONSE TO OFFICE ACTION MAILED 11/08/2005
"Method for Repairing Defects in Metallic Substrate Using Welding"
Serial No. 10/772,701
Examiner: Kevin P. Kerns
Atty. Docket No. 020627.035
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SPECIFICATION AMENDMENTS

Please replace the ABSTRACT with the following amended ABSTRACT:

A method for repairing defects in a metallic substrate including comprising the steps of placing a consumable filler slug in contact with the substrate in the vicinity of the defect; bringing a first electrode and a second electrode in contact with the consumable slug and applying a pressure to the consumable slug; and transmitting electrical current between the electrodes for a period, thereby resistively heating the consumable slug and the metallic substrate resulting in coalescence in a substantially liquid pool that fills the defect. The pool is then cooled to solidification under the pressure of the electrodes. The electrodes are then removed from contact with the consumable slug and excess material may be removed. The consumable slug may be formed as a single unit or multiple sections, and may incorporate sacrificial retainers to add additional defect filling material, retain the pool, and seal the pool from atmosphere.

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Please replace paragraph [0054] of the published application with the following paragraph:

After obtaining the desired predetermined level of cooling, the first electrode 410 and the second electrode 420 are removed from contact with the consumable filler slug 300 and the repair is complete, as seen in FIG. 12. Alternative embodiments may include additional steps such as a step of removing excess consumable filler slug 300 material with a material processing device 800, such as a grinder, so that the surface 710 of the repaired defect 700 is substantially consistent with the level of the adjoining substrate

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100 surface, illustrated in FIG. 13. Removal of excess consumable filler slug 300 material is often desired as it may serve as an indicator that the entire defect 200 has been repaired.

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